

## CLAIMS:

1. Antenna switch (31) which is arranged to alternately operate in a receive mode and a transmit mode, the antenna switch comprising an adaptive filter (30) for coupling a signal processing means to an antenna (1) during the receive mode and for electrically insulating the signal processing means from the antenna (1) during the transmit mode.

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2. Antenna switch (31) according to claim 1, wherein the signal processing means are electrically insulated from the antenna (1) by controllably configuring the adaptive filter (30) such that the adaptive filter is coupled between the antenna (1) and ground (GND) during the transmit mode.

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3. Antenna switch (31) according to claim 2, wherein the adaptive filter (30) is a high-impedance filter during the transmit mode and a low-impedance filter during the receive mode.

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4. Antenna switch (31) according to claims 2 or 3, wherein the adaptive filter (30) has a first passband (22,24) during the transmit mode and a second passband (20) during the receive mode.

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5. Antenna switch (31) according to claim 4, wherein the first passband (22,24) is a band-pass passband and the second passband (20) is a high-pass passband.

6. Antenna switch (31) according to claim 1, wherein the adaptive filter (30) comprises a switch device (S5,S6,S7) through which the signal processing means is coupled to the adaptive filter.

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7. Antenna switch (31) according to claim 6, wherein the switch device (S5,S6,S7) is a low-power switch device.

8. Antenna switch (31) according to claim 7, wherein the low-power switch device is a low-power pHEMT or a MEMS.

9. Antenna switch (31) according to claim 1, wherein the adaptive filter (30) is  
5 further arranged to provide electrostatic discharge protection.

10. Antenna switch (31) according to claim 1, wherein the adaptive filter (30) comprises switching devices (S3,S4,S8) to change the geometry of the adaptive filter (30).

10 11. Module (40) comprising an antenna switch (30) according to claim 1.

12. Portable radio device (50) comprising an antenna switch (30) according to claim 1.